

Grade 10 Applied Science
Earth's Dynamic Climate ISU
Textbook: Nelson Science Connections 10

C Layer: Knowledge and Understanding

Students must demonstrate an understanding of the topics by completing one activity for each topic from the list below. All students must complete a minimum **one** activity from each category. All students must also complete a Summary Concept Map which includes all curriculum expectation topics. Students can achieve a maximum of 70% for thorough completion of these activities.

Category	Activity
1	flash-cards, glossary of terms, crossword
2	note with labeled diagrams, quiz with answers, worksheet with answer
3	view and summarize (including url) a video or computer simulation/animation
4	complete one activity from list: - pg 309 Spreading Out; answer 3a-c - pg 314 Bring on the Sun; answer 4a-e - pg 336 Examine air currents; 5a-b - pg 339 Ice Cold Action 5 a-e

Curriculum Expectation	Topic	Page Reference
3.1	Weather vs Climate	292
	Sun's Effect	308-312
	Earth's Latitude	309
	Earth's Tilt and Orbit	310
	Earth's Motion	310
3.2	Natural Greenhouse Effect	328
	Anthropogenic Greenhouse Effect	345
3.3	Energy Transfer in Atmosphere	335
	Energy Transfer in Oceans	337
3.4	Greenhouse Gases - Natural	329-330
3.5	Greenhouse Gases - Human	342-344
3.6	Natural Causes of Climate Change	340-341
	Human Causes of Climate Change	342
	Canadian Contribution to Climate Change	346-347
3.7	Impacts of climate change	364-368

B Layer: Thinking and Investigation

Students may demonstrate their ability to solve problems and conduct inquiry by selecting any **two** topics and completing one activity from each topic chosen. Students can achieve a maximum of 85% for thorough completion of these activities.

Curriculum Expectation	Topic	Activity
2.2	Natural Greenhouse Effect vs Actual Greenhouse Effect	complete lab 9.2 pg 333
		complete PhET simulation found here http://phet.colorado.edu/en/simulation/greenhouse and summarize the connections to the topic
		design and build a model of a greenhouse
2.3	Source of Greenhouse Gas and Effect ex. 1: decaying garbage at Zwicks Park ex. 2: animal digestive process (cows and methane) ex. 3: burning biomass (Switch grass in LaFarge)	create a video taped news report containing an interview about the production of a local source of greenhouse gas and it's effect
		create a comic strip describing the production of a local source of greenhouse gas and it's effect
2.4	Factors affecting Global Warming and Climate Change	create a comic strip, monologue, story book or puppet show from the perspective of a natural disaster (volcano, earthquake, hurricane or tsunami) describing how an increase in temperature caused the disaster (YOU) to occur and how it has changed climate.
2.5	Carbon Footprint	complete activity 9.7 pg 348 Part A and B using this website http://calculator.carbonfootprint.com/calculator.aspx and answer a-c
2.6	Tools and Systems for Climate Change	complete activity 8.4 pg 306 Procedure 1 and 2 and answer questions a-g
2.7	Compare and contrast popular hypotheses of climate change by choosing 1 of the top 10 arguments against climate change and reviewing all scientific data that refutes the argument using the website: www.skepticalscience.com/	create a bulletin board display
		create a poster
		create a script for a skit/drama/talk show/debate)

A Layer: Application

Students may demonstrate their ability to transfer their knowledge and make connections by completing any **one** of the following activities. Students can achieve a maximum of 100% for thorough completion of this activity.

Curriculum Expectation	Topic	Activity
1.1 1.2	Analyze effects of climate change on living things and natural systems & Analyze how human actions have affected the production of greenhouse gases.	create a lesson box, legend or advice column for the next inhabitants of our planet so they do not repeat our mistakes (address a minimum of three issues)
		create a written monologue or animated monologue from the point of view of an animal or plant affected by climate change (address a minimum of three issues)
		create a series of cartoons to show the causes/effects of climate change (ie Far Side)
		write and perform a song or poem to explain the causes and effects of climate change